

CLAIMS

1. A flat display apparatus in which a display unit formed by arranging pixels in a matrix and a drive circuit driving the display unit are formed integrally on a substrate, characterized in that:

the drive circuit has a first circuit block operating by a first power supply voltage and a second circuit block operating by a second power supply voltage, which is lower than the first power supply voltage, for processing a processing result by the first circuit block;

the second circuit block receives an input of one processing result of the first circuit block at an active element performing on-off operation complementarily; and

the first circuit block has a level setting circuit for setting a level of the one processing result so as to hold an output of the active element at a predetermined level by a fall of the first power supply voltage.

2. The flat display apparatus according to claim 1, characterized in that:

the second circuit block is a reference voltage generating circuit for generating a plurality of reference voltages by resistively dividing a reference voltage by a resistance block, and a reference voltage selector for selectively outputting the plurality of reference voltages according to gradation data showing gradation of the pixels; and

the active element performing on-off operation complementarily is an active element of a switch circuit for switching a polarity of the generated reference voltage by

outputting the output to the resistance block to switch a terminal voltage of the resistance block according to the one processing result.

- 5 3. The flat display apparatus according to claim 1, characterized in that:

the second circuit block is a drive circuit for switching electrode potential of a storage capacitor provided in each of the pixels; and

- 10 the active element performing on-off operation complementarily is an active element for outputting the output to the storage capacitor to switch the electrode potential according to the one processing result.

- 15 4. The flat display apparatus according to claim 1, characterized in that:

the second circuit block is a drive circuit for switching electrode potential of liquid crystal cells of the pixels; and

- 20 the active element performing on-off operation complementarily is an active element for outputting the output to the liquid crystal cells to switch the electrode potential according to the one processing result.

- 25 5. The flat display apparatus according to claim 1 characterized in that:

- the first circuit block has a first inverter operating by the first power supply voltage for outputting the first processing result, a second inverter for outputting the output of the first inverter to the second circuit block, and a power supply switching circuit for switching a power supply voltage
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of the second inverter from the first power supply voltage to the second power supply voltage by a fall of the first power supply; and

the level setting circuit holds the output of the active
5 element at a predetermined level by setting of an input level of the second inverter.

6. The flat display apparatus according to claim 1, characterized by comprising:

10 a power supply circuit for generating a power supply by the first power supply voltage from a power supply by the second power supply voltage, wherein

the power supply by the second power supply voltage is supplied externally.

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7. An integrated circuit having a first circuit block operating by a first power supply voltage and a second circuit block operating by a second power supply voltage, which is lower than the first power supply voltage, for processing a
20 processing result by the first circuit block, characterized in that:

the second circuit block receives an input of one processing result of the first circuit block at an active element performing on-off operation complementarily; and

25 the first circuit block has a level setting circuit for setting a level of the one processing result so as to hold an output of the active element at a predetermined level by a fall of the first power supply voltage.